IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA, *Plaintiff, and,* PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, *Plaintiff-Intervenor,* v. SCRANTON SEWER AUTHORITY, *Defendant,*	Case No. 3:09-cv-1873 (Hon. John E. Jones III)

ERRATA TO
NOTICE OF SECOND AGREED NON-MATERIAL MODIFICATION OF CONSENT DECREE

(No Action Required)

Plaintiff, the United States of America, on behalf of the United States Environmental Protection Agency, files this errata to its Notice of Second Agreed Non-Material Modification of the Consent Decree that it filed on August 4, 2017 (ECF No. 178). Plaintiff inadvertently omitted the signature page of EPA Region 3 from the document that it attached to the notice. A fully executed copy of the Second Agreed Non-Material Modification of the Consent Decree is filed herewith.

Respectfully Submitted,

NATHANIEL DOUGLAS
Deputy Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice

Dated: August 7, 2017

/s/ Daniel S. Smith

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CERTIFICATE OF SERVICE

I hereby certify that on August 7, 2017, I caused copies of the foregoing errata to be served by First Class Mail, postage prepaid, sent to the following addresses:

For Pennsylvania American Water Company:

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UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA, Plaintiff, PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, Plaintiff-Intervenor, v. PENNSYLVANIA AMERICAN WATER COMPANY, Defendant.	CIVIL ACTION NO. 3:CV-09-1873 (Judge Jones)

SECOND AGREED NON-MATERIAL MODIFICATION OF CONSENT DECREE

WHEREAS, on January 31, 2013, the Court approved and entered a Consent Decree (ECF No. 167) between the Plaintiffs and the Sewer Authority of the City of Scranton (the "SSA") in the above-captioned case;

WHEREAS, the Court entered an Amended Consent Decree (ECF No. 174) on December 7, 2016, substituting Pennsylvania American Water Company for the SSA as the Defendant;

WHEREAS, the objectives of the Amended Consent Decree are "for the Defendant to take the steps necessary to achieve full compliance with the [Clean

Water Act, 33 U.S.C. §§ 1251–1387], the regulations promulgated thereunder, including, but not limited to, 33 U.S.C. § 1342(q) and the regulations promulgated thereunder, and the Clean Streams Law [35 Pa. Stat. and Cons. Stat. Ann. §§ 691.1 *et seq.*] and the regulations promulgated thereunder." Amended Consent Decree ¶ 7, Dec. 7, 2016, ECF No. 174.

WHEREAS, the Amended Consent Decree requires Defendant to implement a long-term control plan ("LTCP") for reducing discharges of untreated sewage from its sewer system located in and around Scranton, Pennsylvania (*id.* ¶ 11);

WHEREAS, the Amended Consent Decree requires Defendant to complete implementation of the LTCP no later than December 1, 2037 (*id.* ¶ 12, App. C);

WHEREAS, the LTCP is incorporated into the Amended Consent Decree (*see id.* ¶ 25 (stating that all plans are incorporated into the Consent Decree upon approval by the EPA));

WHEREAS, Appendix C of the Amended Consent Decree specifies the types and sizes of sewage control structures that Defendant must construct, and the schedule by which Defendant must construct them;

WHEREAS, the Amended Consent Decree states that the Parties may make non-material changes to the Amended Consent Decree and the LTCP by written agreement signed by all of the Parties or their successors in interest (*id.* ¶ 89);

WHEREAS, the Plaintiff and the SSA executed a non-material modification and filed it with the Court on December 18, 2015;

WHEREAS, Defendant has, based on new and refined information about its sewer system, proposed certain modifications to the size, location, and schedule of construction for several of the sewage control structures that it must build pursuant to the LTCP and Appendix C of the Amended Consent Decree;

WHEREAS, the Parties agree that the changes proposed herein constitute non-material changes to the LTCP and Appendix C;

NOW, THEREFORE, the Parties agree to the following non-material modifications to the Amended Consent Decree and to the LTCP and hereby provide notice to the Court:

I. MODIFICATIONS TO THE AMENDED CONSENT DECREE

1. Appendix C to the Amended Consent Decree shall be replaced with the document filed herewith as Exhibit 1.

II. MODIFICATIONS TO THE LTCP

2. The document filed herewith as Exhibit 2 is incorporated into the LTCP and shall modify it as stated.

III. GENERAL CONDITIONS

3. Except as expressly stated herein, no provisions of the Amended Consent Decree are modified, superseded, or altered in any way by this Agreement.

4. This Agreement becomes effective upon filing with the Court after execution by each of the Parties.

5. This Agreement may be executed in counterparts.

THE UNDERSIGNED PARTIES enter into this Second Agreed Non-material Modification of Consent Decree in the matter of *United States v. United States v. Pennsylvania American Water Company*.

FOR THE UNITED STATES OF AMERICA:

NATHANIEL DOUGLAS
Deputy Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice

8/3/2017
Dated

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THE UNDERSIGNED PARTIES enter into this Second Agreed Non-material Modification of Consent Decree in the matter of *United States v. Pennsylvania American Water Company*.

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THE UNDERSIGNED PARTIES enter into this Second Agreed Non-material Modification of Consent Decree in the matter of *United States v. Pennsylvania American Water Company*.

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THE UNDERSIGNED PARTIES enter into this Second Agreed Non-material Modification of Consent Decree in the matter of *United States v. Pennsylvania American Water Company*.

FOR THE COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION:

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THE UNDERSIGNED PARTIES enter into this Second Second Agreed Non-material Modification of Consent Decree in the matter of *United States v. Pennsylvania American Water Company.*

FOR PENNSYLVANIA AMERICAN WATER COMPANY:

ANDREW L. SWOPE
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July 6, 2017
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EXHIBIT 1

TO SECOND AGREED NON-MATERIAL MODIFICATION OF CONSENT DECREE

APPENDIX C

LONG TERM CONTROL PLAN

Description of Long Term Control Plan

The approved Long Term Control Plan ("LTCP") consists of the following documents:

1. The Sewer Authority of the City of Scranton, Lackawanna County, Pennsylvania, Combined Sewer Overflow Long Term Control Plan, prepared by Gannett Fleming, adopted October 23, 2012.

2. April 2013 Addendum to December 2012 CSO LTCP, attachment to Letter from Scranton Sewer Authority to USEPA re: SSA Response to February 19, 2013 Agency Comments on SSA's CSO LTCP dated April 15, 2013, responding to Letter from Michelle Price-Fay, Chief, NPDES Enforcement Branch to SSA, dated February 19, 2013 and related Attachment entitled "EPA/PADEP Comments on the Scranton Sewer Authority's Final Long Term Control Plan."

3. Scranton Sewer Authority CSO Long Term Control Plan November 2015 Supplement, Phase A Consent Decree Modifications (contained in Exhibit 1 to the Notice of Non-Materials Modifications of Consent Decree filed with the U.S. District Court on 12/18/2015).

4. Pennsylvania American Water Company CSO Long Term Control Plan April 2017 Supplement Phase B Modifications (contained in Exhibit 1 to the Second Agreed Non-Material Modification of Consent Decree filed with the U.S. District Court).

I. Changes to Project Descriptions Relating to Storage

The project descriptions in all phases of the LTCP call for storage at various CSO outfall. Most of that storage was initially described as consisting of underground concrete box-like structures. As the Defendant proceeds through detailed planning and design for each project location, the shape and nature of the storage structure(s) may change due to site considerations. Defendant may change the shape and/or nature of any storage facility called for in the LTCP provided that (1) the revised project will provide the same storage volume; (2) the Defendant provides written notice to the Plaintiffs of the proposed refinement in the storage facility and a certification that the revised project will provide the equivalent storage volume as the project described in the approved LTCP.

II. Schedule

The schedule for implementation of the LTCP shall be as set forth in Exhibit 1 to this Appendix C.

APPENDIX C, EXHIBIT 1

PENNSYLVANIA AMERICAN WATER COMPANY
CSO LONG TERM CONTROL PLAN
CSO CONTROL IMPROVEMENT SCHEDULE

1 2 3 4 5 11 12 13 24 25

PHASE	YEAR	OUTFALL #	LOCATION	DISTANCE FROM OFBH (RIVER MILES)	CSO CONTROL TYPE	RECEIVING STREAM	STORAGE VOLUME, ESTIMATED (MG)	TOTAL CAPITAL COST, ESTIMATE	EXISTING OVERFLOW VOLUME (mg)	SCORING Total Score	Ranking
A	1	#066	Burke Street	10.045	Upgrade Interceptor	Roaring Brook-Natural	N/A	$1,400,000	1.841	16	2
A	1	#080	Keyser Valley PS	7.192	Concrete equalization tank & pump station upgrade	Keyser Creek	0.029	$2,300,000	0.801	16	3
A	1	#067	Keyser Creek	7.102	Combined With Other	Keyser Creek	N/A		0.325	0	
A	2	#087	Leggetts-Kelly	12.881	Interceptor Upgrade	Leggetts Creek	N/A	$600,000	0.684	17	1
A	2	#072	Leggetts Street	12.805	Sewer Separation	Leggetts Creek	N/A	$800,000	4.711	15	5
A	2	#065	Drinker Street	11.705	Offline Culvert	Little Roaring Brook	0.023	$780,000	0.171	14	8
A	3	#035	Sanderson Avenue	10.788	Sewer Separation	Lackawanna River-Upper	N/A	$650,000	1.475	15.5	4
A	3	#037	Brown Avenue	10.599	Offline Culvert	Lackawanna River-Upper	0.017	$850,000	0.879	14.5	7
A	3	#011	Von Storch Avenue **	9.160	Offline Culvert & Sewer Separation	Lackawanna River-Upper	0.110	$4,000,000	8.283	13.5	9
A	3	#017	Vine Street	8.201	Regulator Improvements	Lackawanna River-Lower	N/A	$400,000	1.282	13.5	10
A	4	#020	E Lackawanna Avenue	7.802	Combine W/#019	Lackawanna River-Lower	N/A		8.812	13.5	11
A	4	#019	Linden Street	7.986	Concrete Tank	Lackawanna River-Lower	1.200	$10,500,000	19.26	11.5	22
A	4	#052	Wyoming Avenue	6.394	Sewer Separation	Lackawanna River-Lower	N/A	$650,000	0.477	13.5	12
A	4	#081	Pittston - Brook	6.710	Offline Culvert	Stafford Meadow Brook	0.080	$1,300,000	0.934	15	6
A	4	#084	639 E Elm St	6.974	Replace Regulator & Sewer Improvements	Stafford Meadow Brook	N/A		0.693	13	13
A	4	#083	Irving-Elm	7.166	Replace Regulator & Sewer Improvements	Stafford Meadow Brook	N/A	$750,000	0.684	0	
A	4	#085	644 E Elm St	6.971	Replace Regulator & Sewer Improvements	Stafford Meadow Brook	N/A		1.393	0	
B	5	#079	Myrtle Street PS	9.516	Ugrade Pumping Station	Roaring Brook-Natural	N/A	$2,300,000	2.663	13	14
B	5	#033	W Parker Street	11.424	Regulator Improvements	Lackawanna River-Upper	N/A	$250,000	0.324	12.5	15
B	5	#038	Wurtz Avenue	10.486	Offline Culvert	Lackawanna River-Upper	0.117	$2,200,000	4.012	12.5	16
B	5	#078	Shawnee Avenue PS	11.046	Inline Culvert	Lackawanna River-Upper	0.009	$720,000	0.46	12.5	17
B	5	#040	W Market Street	10.087	Regulator Improvements	Lackawanna River-Upper	N/A	$250,000	0.81	11.5	19
B	5	#012	Grove Street	9.102	Regulator Improvements	Lackawanna River-Upper	N/A	$250,000	2.234	11.5	20
B	6	#018	Love Road	8.087	Offline Culvert	Lackawanna River-Lower	0.160	$1,850,000	4.536	11.5	21
B	7	#021	W Scranton Street	7.621	Offline Culvert	Lackawanna River-Lower	0.073	$1,000,000	1.757	11.5	23
B	7	#022	Washburn Street	7.468	Concrete Tank	Lackawanna River-Lower	0.7	$5,500,000	18.944		
B	8	#030	Prescott Avenue	8.095	Concrete Tank	Roaring Brook-Natural	1.340	$8,000,000	23.747	12	18
B	8	#024	Hickory Street	7.021	Offline Culvert	Lackawanna River-Lower	0.136	$2,500,000	4.157	11.5	24
B	9	#025	Willow Street	7.031	Offline Culvert	Roaring Brook-Channel	0.218	$2,350,000	6.049	11.5	25
B	9	#051	Birch Street	6.915	Combine W/#025	Lachawanna River-Lower	N/A				
B	9	#049	River Street	7.285	Interceptor Upgrade	Roaring Brook-Channel	N/A	$1,100,000	0.291	11.5	28
B	9	#073	Front Street	7.835	Regulator Improvements	Roaring Brook-Channel	N/A	$250,000	0.128	0	
C	10	#027	Washington-Locust	6.394	Offline Culvert	Lackawanna River-Lower	0.211	$2,090,000	5.294	11.5	26
C	10	#047	Broadway Street	7.063	Inline Culvert	Lackawanna River-Lower	0.013	$830,000	0.345	11.5	27
C	10	#068	S Sixth Avenue	6.156	Offline Culvert	Lackawanna River-Lower	0.020	$1,140,000	1.523	11.5	29
C	10	#053	Cedar Avenue	6.580	Replace Regulator	Stafford Meadow Brook	N/A	$80,000	0.145	0	
C	10	#082	Locust - Cedar	6.606	Inline Culvert	Stafford Meadow Brook	0.045	$1,120,000	0.564	11	30
C	11	#086	414 Maple St	6.610	Replace Regulator	Stafford Meadow Brook	N/A	$80,000	0.278	0	
C	11	#004	Wells Street	11.590	Offline Culvert	Lackawanna River-Upper	0.482	$3,690,000	7.467	10.5	31
C	11	#031	Leggetts Creek	11.690	Combined With Other	Lackawanna River-Upper	N/A	$120,000	1.112	0	
C	12	#006	Gardner Avenue	9.479	Offline Culvert	Lackawanna River-Upper	0.296	$2,390,000	3.905	10.5	32
C	13	#013	Poplar Street 24-inch	8.969	Offline Culvert	Lackawanna River-Upper	1.559	$7,520,000	3.49	10.5	33
C	13	#014	Poplar Street 90-inch	8.967	Combined With Other	Lackawanna River-Upper	N/A	$120,000	23.985	0	
C	14	#015	Gordon Avenue (Pinebrook)	8.279	Precast, Post-Tensioned Tank	Lackawanna River-Lower	1.360	$10,967,000	36.524	10.5	34
D	15	#023	Luzerne Street	6.775	Offline Culvert	Lackawanna River-Lower	0.466	$3,620,000	19.385	10.5	35
D	16	#029	Genet Street	5.978	Offline Culvert	Lackawanna River-Lower	0.867	$5,030,000	19.074	10.5	39
D	17	#003A	WWTP Overflow	5.374	Precast, Post-Tensioned Tank	Lackawanna River-Lower	2.850	$17,753,000	93.295	10.5	40
E	19	#045	Emmett Street	7.131	Inline Culvert	Lackawanna River-Lower	0.008	$1,130,000	0.33	10.5	36
E	19	#048	Washington-Alder	6.940	Inline Culvert	Lackawanna River-Lower	0.014	$740,000	0.374	10.5	37
E	20	#005	Love Place	9.935	Offline Culvert	Lackawanna River-Upper	0.086	$1,850,000	2.483	9.5	41
E	21	#043	Olive Street	8.319	Offline Culvert	Lackawanna River-Upper	0.059	$1,390,000	1.315	9.5	42
E	21	#028	Fig Street	6.191	Offline Culvert	Lackawanna River-Lower	0.075	$1,800,000	2.611	9.5	43
E	22	#016	Pettibone Street	8.138	Offline Culvert	Lackawanna River-Lower	0.921	$4,700,000	17.86	9.5	44
E	23	#007	Philo Street	9.441	Offline Culvert	Lackawanna River-Upper	0.685	$3,770,000	4.341	8.5	45
E	23	#008	Hawk Street	9.379	Combined With Other	Lackawanna River-Upper	N/A	$120,000	14.291	0	
E	23	#026	W Elm Street	6.549	Offline Culvert	Lackawanna River-Lower	0.263	$2,740,000	1.826	8.5	46
E	24	#055	Drinker Place	10.804	Offline Culvert	Lackawanna River-Upper	0.761	$7,670,000	5.989	7.5	47
E	24	#056	Boulevard Avenue	10.801	Combined With Other	Lackawanna River-Upper	N/A	$120,000	2.562	0	
E	24	#057	Richmont Street	10.807	Combined With Other	Lackawanna River-Upper	N/A	$120,000	0.019	0	
E	24	#058	Grandview Street	10.850	Combined With Other	Lackawanna River-Upper	N/A	$120,000	0.129	0	
E	24	#059	Woodlawn Street	10.924	Combined With Other	Lackawanna River-Upper	N/A	$120,000	1.287	0	
E	24	#060	Park Avenue	10.999	Combined With Other	Lackawanna River-Upper	N/A	$120,000	0.496	0	
E	24	#061	Morel Street	0.000	None	Lackawanna River-Upper	N/A	$0	0	0	
E	24	#062	Fisk Street	0.000	Combined With Other	Lackawanna River-Upper	N/A	$120,000	0.268	0	
E	24	#063	Olyphant South 24-inch	11.153	Combined With Other	Lackawanna River-Upper	N/A	$120,000	1.936	0	
E	24	#064	Olyphant North 12-inch	11.148	None	Lackawanna River-Upper	N/A	$0	0	0	
E	25	#075	Capouse Avenue	9.730	Offline Culvert	Meadow Brook-Channel	0.158	$2,030,000	2.7	6.5	
E	25	#032	Watkins Street	11.634	Replace Regulator	Lackawanna River-Upper	N/A	$80,000	0.06	0	
E	25	#034	E Parker Street	11.288	Replace Regulator	Lackawanna River-Upper	N/A	$80,000	0.175	0	
E	25	#036	Tioga Street	10.658	Replace Regulator	Lackawanna River-Upper	N/A	$80,000	0.535	0	
E	25	#069	Crane Street	4.346	Replace Regulator	Lackawanna River-Lower	N/A	$80,000	0.485	0	
E	25	#074	Marion Street	9.597	Replace Regulator	Meadow Brook-Channel	N/A	$80,000	0.076	0	
E	25	#076	Sanderson-Marion	9.525	Replace Regulator	Meadow Brook-Channel	N/A	$100,000	0.093	0	48
						Total	15.411	$139,330,000	401.444		

** PAWC asserts that a force majeure event has occurred with respect to the Van Storch Ave. Project for which PAWC expects/will submit a request for schedule modification

*Note: the Scoring and Ranking columns and the color coding indicate how the projects were evaluated and grouped by the SSA in developing the LTCP.

IMPLEMENTATION OF APPENDIX C PROJECTS

The projects in Appendix C, Exhibit 1 shall be implemented in accordance with the following schedule:

All of the projects in Phase A shall be complete by December 1, 2017.

All of the projects in Phase B shall be complete by December 1, 2021. Moreover, as interim milestones:

- at least 5 of the projects in this phase will be complete by December 1, 2017;
- at least 7 of the projects in this phase will be complete by December 1, 2018;
- at least 9 of the projects in this phase will be complete by December 1, 2019; and
- at least 12 of the projects in this phase will be complete by December 1, 2020.

All of the projects in Phase C shall be complete by December 1, 2026. Moreover, as interim milestones:

- at least 4 of the projects in this phase will be complete by December 1, 2022;
- at least 7 of the projects in this phase will be complete by December 1, 2023;
- at least 9 of the projects in this phase will be complete by December 1, 2024; and
- at least 11 of the projects in this phase will be complete by December 1, 2025.

All of the projects in Phase D shall be complete by December 1, 2029. Moreover, as interim milestones:

- at least 1 of the projects in this phase will be complete by December 1, 2027; and
- at least 2 of the projects in this phase will be complete by December 1, 2028.

All of the projects in Phase E shall be complete by December 1, 2037. Moreover, as an interim milestone, at least 13 of the projects in this phase will be complete by December 1, 2033.

EXHIBIT 2

TO SECOND AGREED NON-MATERIAL MODIFICATION OF CONSENT DECREE

PENNSYLVANIA AMERICAN WATER COMPANY
CSO LONG TERM CONTROL PLAN
APRIL 2017 SUPPLEMENT:
PHASE B MODIFICATIONS

This supplement provides details for minor modifications to Appendix C of the Amended Consent Decree and certain projects listed therein, and Table ES-3 of the Long Term Control Plan ("LTCP"). These refinements of the original projects result from more detailed analyses performed by the SSA and PAWC as they proceed to plan, design, and implement the projects.

With these modifications, and with other changes that have been made to the LTCP model, the LTCP model currently predicts increased frequency or volume of overflows (or both) at certain outfalls that are scheduled to be addressed in phases C, D, or E of the LTCP, or that were not originally included in the LTCP because the model, at the time, did not indicate a need for improvements. PAWC will amend the LTCP according to the schedule below in a manner that reasonably progresses toward and will ensure that, upon completion of the LTCP, the system:

- "shall on a system-wide annual average basis compared to the typical year (1) allow no more than four activations occur from a CSO to the natural channels of the tributary streams and no more than nine activations occur from a CSO to channelized sections of the tributary streams and the Lackawanna River; and (2) eliminate or capture for treatment, or storage and subsequent treatment, at least 90 percent of the system-wide combined sewage volume collected in the CSS during precipitation events. Captured combined sewage shall receive the treatment specified in the LTCP but at a minimum, primary clarification, solids and floatables disposal and disinfection. For purposes of this condition, a "typical year" is defined as a year with precipitation characteristics that are not materially different than the characteristics of 1982 as described in Section 2.5.1 of the Long-Term Control Plan dated October 23, 2013."; and

- will result in a long term control plan that ultimately complies with the EPA's CSO Policy and the Consent Decree.

Outfalls	Deadline for Modifications
Phase C	December 1, 2020
Phase D	December 1, 2025
Phase E	December 1, 2028
Outfalls not Addressed in LTCP	December 1, 2028

The modifications to phase B, which have been agreed to by all parties, are as follows:

I. Burke Street, CSO #066.

The preliminary location identified in the LTCP for the 134,000 gallon storage facility for Outfall 066 would require a pumping station and impact existing commercial establishments in the area. To reduce the future operation and maintenance costs and impacts to nearby commercial properties, the Scranton Sewer Authority (SSA) examined several alternatives. The most cost effective alternative is to divert flows to a new 18-inch sewer on Mill Street, which would replace two existing sewers in need of major rehabilitation. As the Burke Street system (CSO #066) overflows to the Roaring Brook and both the Myrtle Street Pumping Station (CSO #079) and Prescott Ave. (CSO #030) are downstream of Burke Street and also overflow to Roaring Brook, it was necessary to consider all three overflows in developing the alternative for Burke Street. Myrtle Street and Prescott are Phase B projects.

Based upon these analyses, in lieu of the storage facility, PAWC proposes to replace sewers between Burke St. and Cherry St. with 18" pipe and add a diversion weir (Crest: 960.5 ft) at Burke & Mill to divert extreme flow from the #066 upstream drainage basin to #066 outfall. This approach would achieve four overflow events in the typical year. It will also reduce surcharging between Burke

and Cherry Streets. However, there will be minor increased flows to CSOs #013 and #014 that will be addressed in Phase C.

II. Grove Street, CSO #012

SSA staff performed field investigations of the Grove Street drainage basin and the adjacent drainage basin for the Middle Street Pumping Station. The field data revealed that (1) large areas of the Grove Street system were separated, and (2) a large area that the model showed as being a tributary to Grove Street was actually draining to Middle Street. The drainage areas have been corrected in the model.

Based upon these corrections, the model indicates that the proposed 87,000 gallon CSO storage facility for outfall #012 can be eliminated. The revised delineation of the drainage results, coupled with raising the weir elevation to 685, will achieve three overflow events in the typical year rather than the nine events anticipated in the LTCP. Thus, the storage facility proposed in the LTCP is not necessary.

Further analyses indicated that the existing weir crest (683.94) in the regulator is lower than the river stage during about 31 storm events; therefore, at higher river stages, river water was flowing back into the sewers and causing Block In/Out data contradictions. These inflows cause reduced capacity in the sewers and delivery of river water to the treatment plant. Raising the weir elevation to 685.0 will address this inflow. See the attached analysis for Outfall #012 (Exhibit B).

Subject to field verification of certain information, the modeling results indicate that the impact of these corrections on Outfall #077 Middle Street is nominal and the Outfall will still meet the seven events predicted in the LTCP, and that the combined volume discharge between #012 and #077 will be the same or lower than anticipated in the LTCP.

III. CSOs #021 & #022

Because of their close proximity to each other (approximately 800 feet apart), the LTCP anticipated controlling these two outfalls using one CSO storage facility (with a volume of 750,000 gallons, that would limit the annual overflow events to eight). However, the combined sewers at Washburn (#022) are very deep and there was no available subsurface data available for this area. In order

to obtain subsurface data, SSA performed a series of borings to help identify the subsurface soils characteristics. The investigation revealed significant shallow rock between these two outfall locations. Several alternatives were examined to locate storage at each location and utilize deep gravity sewers to connect them, and also an alternative with a deep pumping station at #022 with a surface storage facility. All of these alternatives were eliminated, as the costs of deep rock excavation would be prohibitive. At this point, the decision was made to use two separate facilities. After several alternatives were examined, the following facilities were selected.

A. W. Scranton Street, CSO #021

The solution for this Outfall is an off-line storage pipe with a volume of approximately 73,000 gallons. This volume of storage will control overflows up to the largest six events per year. The preferred alternative is a 10' diameter steel reinforced polyethylene (SRPE) pipe located between 7TH Avenue and the Lackawanna Heritage Trail. This storage pipe will be approximately 125 feet long to provide the required volume of storage and will be filled and drained by gravity.

B. Washburn Street, CSO #022

The solution for this Outfall is a concrete off-line storage tank with a volume of about 700,000 gallons. This volume of storage will control overflows up to the largest six events per year. The identified location is between 7th Avenue and the railroad near McHale. As part of this plan, the existing deep "Old Culvert", which conveys the combined sewage to the regulator, is to be abandoned and replaced by a 48" diameter pipe from manhole WS567 to approximately manhole WS560. As the new 48" pipe will be higher than the existing culvert, the storage tank can fill and drain by gravity. A side water depth of 20 feet has been selected to minimize the footprint and limit land acquisition and potential rock excavation. The dimensions of the storage facility will be finalized after surveys to make best use of available land taking into account the proximity of rock under this site. The tank is conceived to be two bays with the primary bay overflowing to the secondary bay; in this configuration, it is intended that the "first flush" will be contained in the primary bay and that only the primary bay will need a flushing device.

IV. Hickory Street, CSO #024

Based upon updated interceptor capacity information and updating of the local sewer network in the model since the LTCP was developed, a smaller CSO storage facility of 136,000 gallons is needed instead of the 245,000 gallons predicted in the LTCP. The existing surveyed weir elevation would remain. This will achieve the same nine events per typical year but with an approximately 30% smaller annual overflow volume of 2.09 MG (instead of the 2.99 MGD in the LTCP).

V. Willow Street, CSO #025, & Birch Street, CSO #051

PAWC performed a revised delineation of the drainage basins between the various outfalls in this area around CSOs #025 and #051[1] as well as field verification of pipe sizes and hydraulic structure configurations.

The proposed modification would (1) raise the regulator overflow weir elevation to 2.08 feet from the existing 0.75 feet; corresponding to the elevation assumed in the LTCP Model, and (2) replace the previously 360,000 gallon storage structure with a 218,000 gallon structure (which, as explained below, is calculated to be adequate to address flows for both Outfall #025 Willow Street and Outfall #051 Birch Street).

The reevaluation revealed that a 207,000 gallon storage structure – rather than the 360,000 gallons assumed in the LTCP - is necessary for CSO #025 Willow Street. The current model predicts that the 207,000 gallon storage facility will achieve eight events in a typical year (as compared to the nine events assumed in the LTCP) and reduce typical year overflow volume by approximately 400,000 gallons in the typical year from the predicted LTCP levels.

The changes in the drainage area delineations will result in modifications to Outfall #051 (Birch Street) in Phase E as well. The storage volume for Birch Street decreases from 17,000 gallons to 11,000 gallons due to the drainage area corrections and other corrections.

During the site surveys for the Willow Street facility it was noted that the combined sewers for both Willow and Birch Street are proximate and the future

[1] The remedy for overflows at CSO #051 was originally scheduled phase E of the LTCP.

Birch storage can be eliminated by including this overflow volume at Willow Street. The volume required at Willow Street will increase by the 11,000 gallons, to a total of 218,000 gallon, which is less than 6%, and the number of discharges at Birch remain at eight per year.

VI. Prescott Avenue, CSO #030

Because the changes being made to Burke Street (CSO #066) and the Myrtle Street Pumping Station (CSO #079) affect Prescott Avenue (CSO #030), PWSA performed a more detailed analysis on the performance of the Prescott Street Outfall. Prescott is downstream of Burke and Myrtle and also discharges to Roaring Brook. The LTCP recommended a 1.357 MG CSO storage facility that would result in four overflows per typical year with a volume of 4.258 MG.

Using available capacity in the interceptor and with the overflows diverted from Burke Street, the analysis indicates that the four typical year events can be met with only 1.06 MG of storage. However, by providing approximately 1.34 MG of storage, the typical year events will be reduced to only two. This will be a significant improvement to Roaring Brook.

VII. W. Parker Street, CSO #033

By raising the weir crest from 710.09 to 710.59, the 13,000 gallon storage facility can be eliminated and the overflows are reduced from the current level of 31 to 6 events in the typical year.

VIII. W. Market Street, CSO #040

The proposed 17,000 gallon storage facility at West Market Street (CSO #040) can be eliminated by raising the weir to elevation 696.5. Doing so will reduce the number of typical year discharge events from eight to five and the annual overflow volume is reduced from 436,000 gallons to 396,000 gallons. This analysis assumes no controls on the upstream facility at Welles Street (CSO #004). As Welles is estimated to require about 580,000 gallon storage, the typical year discharge events from #040 would be further reduced to five and the typical year overflow volume would be reduced by another 20,000 gallons.

IX. River Street, CSO #049

In trying to locate a site for the 14,000 gallon CSO storage facility for this outfall, SSA discovered a utility conflict in the form of a 36-inch water transmission main with a large concrete trust block. It is therefore proposed that in lieu of a 14,000 gallon storage facility, a new 15-inch interceptor be installed to replace the existing 8" interceptor. These changes will reduce typical year overflow events at Outfall #049 to two. An additional benefit is that the interceptor replacement is being coordinated with improvements to water front access as a public amenity.

X. Myrtle Street Pump Station, CSO #079

PAWC proposes to substitute a pump station upgrade (to 4.4 MGD) in lieu of the originally proposed 182,000 gallon storage facility. This change will reduce the typical year overflows from four to three and the annual overflow volume from 5.5 MG to 1.49 MG.

The LTCP model assumed that all three pumps available at the station would be operated during wet weather. However, the actual operation is only two pumps operating. Under this corrected assumption, the storage volume would need to be increased from 182,000 gallons to 320,000 gallons.

Because the pumps need replacement, increasing the pump station capacity to 4.4 MGD will provide a greater benefit: reducing typical year CSO events from four to three and the annual overflow volume from 5.5 MG to 1.49 MG.

The impact of this change to the downstream storage at Prescott (CSO #030) was evaluated and is discussed above.